

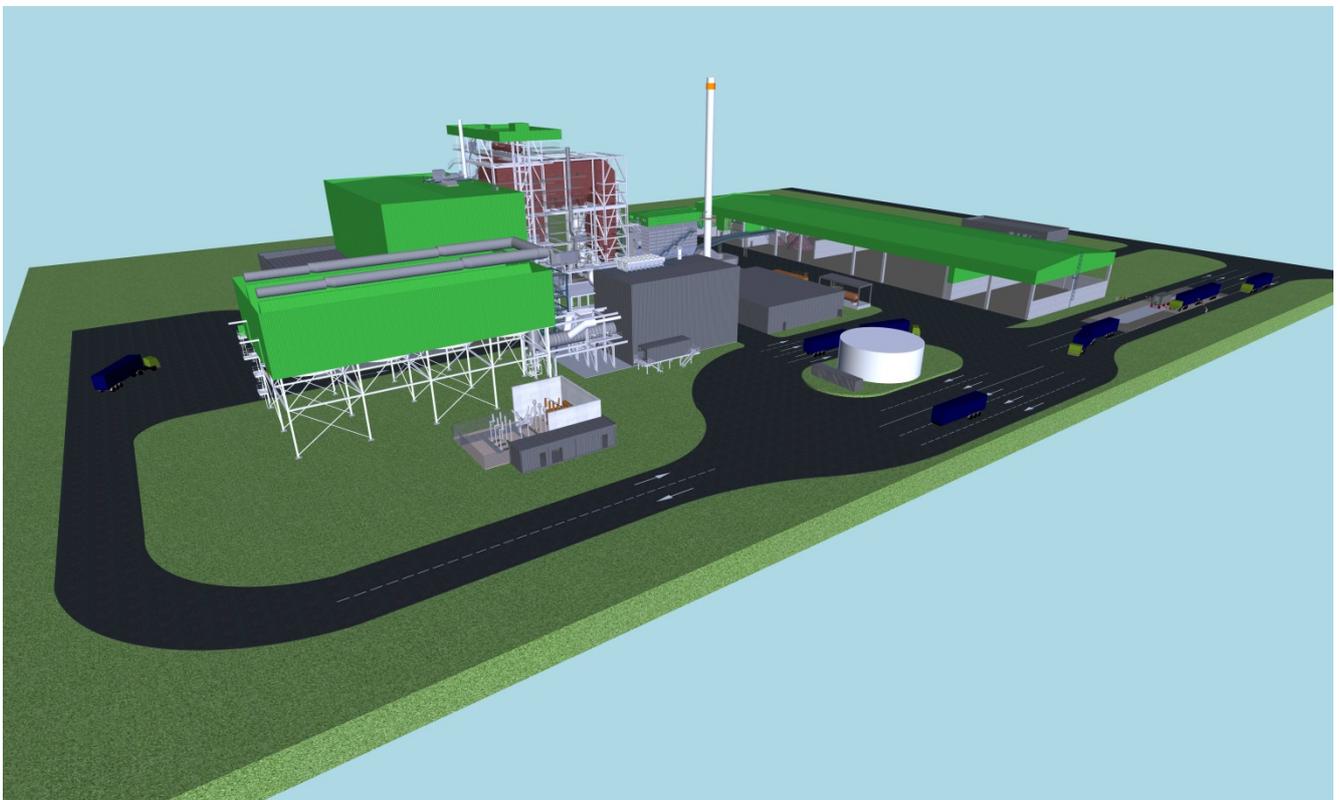
Factsheet - 14th September 2017

Fact Sheet - East Rockingham Resource Recovery Facility

Key Figures

Developer	Hitachi Zosen Inova (HZI), New Energy Corporation, and Tribe Infrastructure Group
Operator	JV between HZI and New Energy
Turn-key contractor	HZI in JV with a local construction company
Waste type	Residual waste – municipal and commercial
Number of lines	1
Annual capacity	300,000 tonnes per annum
Plant throughput	37.5 tonnes per hour
Plant thermal capacity	101.8 MW
Grate type	HZI grate
Flue gas treatment	SNCR, HZI Dry system
Recyclables	Aggregates and metals

Facility Design





Moving Away from Landfill

The East Rockingham Resource Recovery Facility (RRF) has the capacity to handle up to 300,000 tonnes of residual household and commercial waste every year – waste that would otherwise be disposed of in landfill sites. The plant supports the State Government's target to divert 65% of waste away from landfill by 2020.

The Process for Safe Thermal Treatment

HZI is a global leader in the waste to energy market having installed over 500 facilities. The East Rockingham RRF represents the best available technology in the world today.

The integrated design process starts with a fully automatic crane that delivers thoroughly mixed waste from a bunker into the feed hopper. Once the waste has been pushed onto the HZI grate via a ram feeder, it passes through the different combustion phases: drying, ignition, combustion, and burnout. Five individually controllable grate zones guarantee optimum combustion, regardless of the composition and calorific value of the waste. The combustion process is further controlled by the injection of primary air from underneath the grate and taken from the bunker area, while secondary air and recirculated flue gas are also tangentially injected at high velocity into the secondary combustion chamber above the grate. This results in intensive mixing and thorough burnout of flue gases. The energy released during combustion is transferred to the water steam cycle in the downstream five-pass boiler.

The plant's single-line design assures high availability, crucial in terms of ensuring continuity in the waste management process. With a nominal thermal capacity of 101.8 MW and net efficiency in excess of 27.9%, the plant has an electric power generation of around 28 MW, providing enough electricity to power the equivalent of 36,000 homes. The energy-efficient design with an R1 factor of 0.77 exceeds the European R1 energy efficiency criteria 0.65, which qualifies it as a genuine means of energy recovery.

Complying with Strict Emission Limit Values

The plant fully complies with the European emission limit values as a matter of course. Its flue gas treatment system operates reliably, and is based on proven designs from other HZI facilities in London and Paris. The flue gas treatment philosophy is based on a selective non-catalytic reduction (SNCR) DeNOx system, a HZI Dry system consisting of a fluid bed reactor with lime and activated carbon injection, and a bag house filter. After safe removal of any pollutants, an induced draft fan blows the clean flue gas into the 60-metre-high stack. Before leaving the stack, a continuous measurement system checks conformity with the stringent local emissions legislation. Independently certified emission reports will be published regularly.

From Residue to Product

The bottom ash from the process is transported from the plant by belt conveyors to an adjacent treatment, metal removal and storage area. Metals and aggregate are recycled. The latter leaves the plant for further use, for example as filling material for road construction.

Location and Transport

The Project, located at 1 Office Rd, East Rockingham, is within the Kwinana Strategic Industrial Area and the site is zoned for heavy industry. The site was identified by LandCorp and the Department of State Development as a suitable location for a waste-to-energy project back in 2013.

A new exit off the Kwinana Freeway at Mundajong Rd was opened in 2014. The road leads directly to the Resource Recovery Facility, ensuring that no waste trucks drive through surrounding residential areas. Most waste will come from waste transfer stations where waste is inspected before being amalgamated in larger trucks. This stage will greatly reduce the number of trucks delivering waste to the site.
